



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

117

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,786	06/06/2005	Hiromasa Futamata	Q88386	4611
23373	7590	10/03/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			DUONG, DIEU HIEN	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/537,786

Applicant(s)

FUTAMATA, HIROMASA

Examiner

Dieu Hien T. Duong

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06/06/05.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-19, 24, 31, 34-35, 37-38 is/are rejected.
- 7) ☐ Claim(s) 5-8, 20-23, 32-33, 36, 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06/06/05 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/537,786.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/06/05, 09/02/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action will replace the prior Office Action, filed on July 26th, 2006.

Drawings

1. The drawings are objected to because in Figure 4, both slip portion 6 and second antenna 9 are pointed to the same element. The slip portion 6 is not clearly showing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 13 is objected to because of the following informalities:

Claim 13, line 2, "an LCD" should be - - a LCD- -.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 26 recites the limitation "the base number" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2821

6. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoyama et al. (US 6,452,554 B1).

Regarding claim 1, Figure 12C of Aoyama shows an antenna comprising a thin plate-like base member 1 made of dielectric material; a ground conductor 22 formed of a thin-film shaped and rectangular conductor and disposed on the base member 1; a first antenna element 21b, 23 formed of a thin-film shaped and L-shaped conductor having one end connected to one end of the ground conductor 22 and disposed on the base member 1; and a second antenna element 21a formed of a thin-film shaped and rectangular conductor and disposed on the base member 1 without being directly connected to the ground conductor 22 and the first antenna element 21b, 23.

Regarding claim 2, as applied to claim 1, since the antenna structure in Figure 12C of Aoyama is exactly the same as claimed invention, it inherently produces the same function as claimed by applicant which a first resonance being generated by electric current distributed on the first antenna element 21b, 23 and a second resonance being generated by electric current distributed on the second antenna element 21a.

7. Claims 16-19 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ikegaya et al. (US 2004/0008146 A1).

Regarding claim 16, Figure 36 of Ikegaya shows an antenna comprising a thin plate-like base member 15 made of dielectric material; a first antenna element 4, 3 formed of a thin film shaped conductor and disposed on the base member 15 so as to form a slip portion opening a part thereof; a second antenna

Art Unit: 2821

element 6 formed of a thin film and strip shaped conductor and disposed in the slit portion; and an impedance adjustment element 5 formed of a thin-film and strip shaped conductor and disposed between one side of the first antenna element and the second antenna element in the slip portion.

Regarding claim 17, as applied to claim 16, since the antenna structure in Figure 36 of Ikegaya is exactly the same as claimed invention, it inherently produces the same function as claimed by applicant which a first resonance being generated by electric current distributed on the first antenna element 4, 3, a second resonance being generated by electric current distributed on the second antenna element 6 and impedance being adjusted corresponding to a shape and arrangement location of the impedance adjustment element 5.

Regarding claim 18, as applied to claim 16, Figure 36 of Ikegaya shows that the first antenna element 4, 3, the second antenna element 6 and the impedance adjustment element 5 are disposed on one surface of the base member.

Regarding claim 19, applied to claim 18, Ikegaya shows the first antenna element 4, 3, comprising a first radiating portion 4 formed in a strip shape; a second radiating portion 3 formed in a strip shape and disposed in parallel to the first radiating portion; and an interconnecting portion having one end vertically connected to one end of the first radiating portion and the other end vertically connected to one end of the second radiating portion, the second antenna element 6 being disposed between the first radiating portion and the second radiating portion and in parallel to the first radiating portion, and the impedance

Art Unit: 2821

adjustment element 5 disposed between the second radiating portion and the second antenna element and in parallel to the second radiating portion.

Regarding claim 31, Figure 36 of Ikegaya shows an antenna comprising a thin plate-like base member 15 made of dielectric material; a first antenna element 4, 3 formed of a thin-film shaped conductor and disposed on the base member 15 so as to form a slit portion opening at a part thereof; and a second antenna element 6 formed of a thin-film and strip shaped conductor and disposed in the slit portion.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-4 and 9-10, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US 6,452,554 B1) in view of Tai et al. (US 2004/0046697 A1).

Regarding claim 3, Aoyama discloses every feature of claimed invention except for the ground conductor; the first antenna element and the second antenna element being disposed on one surface of the base member. However, Figure 1 of Tai shows the antenna element and the second antenna element being disposed on one surface of the base member. It would have been obvious

Art Unit: 2821

to one ordinary skill in the art at the time the invention was made to dispose all Aoyama antenna elements in one pane as taught by Tai, doing so would occupy a relative small space in an electric device (page 1, par. [0007]).

Regarding claim 4, as applied to claim 3, Figure 1 of Tai shows a slit portion opening at a part thereof is formed on the base member 1 by combining the ground conductor 13 and the first antenna element 11 and the second antenna element 12 being disposed in the slit portion.

Regarding claim 9, as applied to claim 1, Tai (page 1, par. [0020]) discloses the base member having flexibility.

Regarding claim 10, as applied to claim 9, Tai (page 1, par. [0019], [0020]) discloses the ground conductor, the first antenna element and the second antenna element having flexibilities.

Claims 24-25 are rejected for similar subject matter to claims 9-10.

10. Claims 11-12 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US 6,452,554 B1) in view of Tai et al. (US 2004/0046697) and further in view of Rutkowski et al. (US 6,124,831).

Regarding claim 11, Aoyama/Tai disclose every feature of claimed invention except for a support member made of non-conductor and fixedly securing the base member. However, Figure 6A of Rutkowski shows a support member made of non-conductor and fixedly securing the base member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Aoyama/Tai antenna with a support member made of non-conductive and fixed securing the base member, as taught by Rutkowski, doing

Art Unit: 2821

so would particularly well suited for operations within various communication system utilizing multiple, widely separated frequency bands (col. 3, lines 9-17).

Regarding claim 12, as applied to claim 11, Figure 6A of Rutkowski shows the support member comprises an upper end portion 56 extending to one direction; a lower end portion 52 disposed in parallel to the upper end portion; and an interconnecting portion 55 having one end vertically connected to one end of the upper end portion and the other end vertically connected to one end of the lower end portion.

Claims 26-27 are rejected for similar subject matter to claims 11-12.

11. Claims 13-14 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama (US 6,452,554 B1) in view of Tsai (US 6,297,779 B1).

Regarding claim 13, Aoyama discloses every feature of claim invention except for the base member being mounted on a LCD section of a notebook-sized PC. However, Figure 1 of Tsai shows the base member being mounted on a LCD section of a notebook-sized PC. It would have been obvious to one having ordinary skill in the art at the time the invention was made to mount Aoyama antenna on a LCD section of a notebook-sized PC as taught by Tsai, doing so would made antenna effectively transmitting and receiving electrical signals.

Regarding claim 14, Figure 1 of Tsai shows the base being mounted on a corner area of a casing of a notebook-sized PC.

Claims 28-29 are rejected for similar subject matter to claims 13-14.

Art Unit: 2821

12. Claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US 6,452,554 B1) in view of Wong et al. (US 6,774,853 B2).

Regarding claim 15, Aoyama discloses every feature of claimed invention except for the ground conductor, the first antenna element and the second antenna element are formed on the base member by means of at least one of an etching technique and a screen printing technique. However, Wong (col. 2, lines 57-65) discloses the first antenna element and the second antenna element are formed on the base member by means of at least one of an etching technique and a screen printing technique. It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate Aoyama antenna with an etching technique as taught by Wong, doing so would contributing to the improvement of fabrication accuracy and low in manufacturing cost of the antenna (col. 1, lines 26-30).

Claim 30 is rejected for similar subject matter to claim 15.

13. Claims 34-35 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (US 6,452,554 B1) in view of Higashiguchi et al. (US 5,361,488).

Regarding claims 34-35, Aoyama discloses every feature of claimed invention except for a support member having rigidity and fixed securing the base member and the base member being integrally formed with the support member. However, Figures 8, 10 and col. 6, lines 5-16 of Higashiguchi show a support member 20 having rigidity and fixed securing the base member and the base

Art Unit: 2821

member being integrally formed with the support member. It would have been obvious to one having ordinary skill in the art at the time the invention was made provide Aoyama antenna with a support member having rigidity and fixed securing the base member and the base member being integrally formed with the support member, as taught by Higashiguchi, doing so would reduce size, high and cost of the antenna (col. 1, lines13-24).

Claims 37-38 are rejected for similar subject matter to claims 34-35.

Allowable Subject Matter

14. Claims 5-8, 20-23, 32-33, 36 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, Tai et al. (US 2004/0046697) fails to teach a contact portion formed on the second antenna element in order to electrically connected the second antenna element to second conductor of the cable via dielectric member.

Claims 6-8, and 36 would have been found allowable for being dependent on claim 5.

Regarding claim 20, Ikegaya (US 2004/0008146 A1) fails to teach the second antenna element being longer than the second radiating portion.

Art Unit: 2821

Regarding claim 21, Ikegaya fails to teach a first connecting portion formed on the second radiating portion in order to electrically connect the second radiating portion of the first antenna element to a first conductor of a cable; a first contact portion formed on the impedance adjustment element in order to contact the impedance adjustment element to the first conductor of the cable covered with a covering material; a second connecting portion formed on the second antenna element in order to electrically connect the second antenna element to a second conductor of the cable; and a second contact portion formed on the first radiating portion in order to contact the first radiating portion of the first antenna element to the second conductor of the cable via a dielectric member.

Claims 22-23 and 39 would have been found allowable for being dependent on claim 21.

Regarding claim 32, Ikegaya fails to teach a first rear surface antenna element formed of a thin-film shaped conductor and disposed on the other surface of the base member so as to form a rear surface slit portion opening at a part thereof; and a second rear surface antenna element formed of a thin-film and strip shaped conductor, disposed in the rear surface slit portion and electrically connected to the second antenna element.

Claim 33 would have been found allowable for being dependent on claim 32.

Art Unit: 2821

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit 2821
DD



HOANG V. NGUYEN
PRIMARY EXAMINER